

## **Congenital Malformations in Children Born to Women with Asthma**

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**Table 1 Risk of nervous system malformation in children born to women with asthma**

	cases (n=237)		controls (n=1,377)		Adjusted Odds Ratio <sup>β</sup> (95% CI)	p-value
	n	(%) <sup>α</sup>	n	(%) <sup>α</sup>		
<b>Maternal asthma:</b>						
no asthma diagnosis or medications before delivery	204	(86.1)	1,205	(87.5)	reference	
asthma diagnosis or medication <sup>γ</sup> before delivery	33	(13.9)	172	(12.5)	1.14(0.78-1.69)	0.495
diagnosis with no medication before delivery	10	(4.2)	38	(2.8)	1.59(0.78-3.25)	0.205
asthma medication <sup>γ</sup> but no diagnosis before delivery	6	(2.5)	41	(3.0)	0.88(0.38-2.03)	0.765
diagnosis and asthma medication <sup>γ</sup> before delivery	17	(7.2)	93	(6.8)	1.08(0.63-1.86)	0.783
≥1 asthma exacerbation during pregnancy	0	(<0.5)	2	(<0.5)	n/a	0.627
<b>≥1 medication exposure during pregnancy*:</b>						
Any asthma medication	16	(6.8)	99	(7.2)	0.93(0.55-1.57)	0.781
Short acting β-agonist	16	(6.8)	94	(6.8)	0.98(0.58-1.65)	0.942
Inhaled corticosteroid	8	(3.4)	46	(3.3)	1.04(0.47-2.31)	0.915
Long acting β-agonist	2	(0.8)	5	(<0.5)	2.60(0.39-17.17)	0.322
Oral corticosteroid	3	(1.3)	6	(<0.5)	2.93(0.74-11.66)	0.126
Other bronchodilator medication**	0	(<0.5)	3	(<0.5)	n/a	
Other anti-inflammatory medication***	0	(<0.5)	2	(<0.5)	n/a	

<sup>α</sup> Proportion of cases or controls whose mothers have diagnosis or at least one selected drug prescription in pregnancy

<sup>β</sup> Odds Ratios (95% Confidence Intervals) adjusted for maternal age at birth of case or control child; Maternal smoking status, body mass index, socioeconomic status, sex of the child, gestation of pregnancy had no confounding effects.

<sup>γ</sup> Any asthma medication except oral corticosteroids

\*Reference groups are mothers with no prescriptions for the selected drug group in pregnancy

\*\*Aminophylline, theophylline, ephedrine, orciprenaline, tiotropium, or ipratropium

\*\*\*Cromoglicic acid, nedocromil, montelukast or zafirlukast

**Table 2 Risk of eye, ear, face or neck malformation in children born to women with asthma**

	cases (n=293)	controls (n=1,718)	Adjusted Odds Ratio <sup>β</sup>	p-value
	n (%) <sup>α</sup>	n (%) <sup>α</sup>	(95% CI)	
<b>Maternal asthma:</b>				
no asthma diagnosis or medications before delivery	262 (89.4)	1,529 (89.0)	reference	
asthma diagnosis or medication <sup>γ</sup> before delivery	31 (10.6)	189 (11.0)	0.96(0.64-1.44)	0.844
diagnosis with no medication before delivery	7 (2.4)	31 (1.8)	1.30(0.55-3.04)	0.552
asthma medication <sup>γ</sup> but no diagnosis before delivery	7 (2.4)	58 (3.4)	0.70(0.32-1.50)	0.356
diagnosis and asthma medication <sup>γ</sup> before delivery	17 (5.8)	100 (5.8)	1.01(0.58-1.76)	0.972
≥1 asthma exacerbation during pregnancy	1 (<0.5)	7 (<0.5)	0.85(0.10-7.02)	0.880
<b>≥1 medication exposure during pregnancy*:</b>				
Any asthma medication	17 (5.8)	122 (7.1)	0.81(0.48-1.38)	0.439
Short acting β-agonist	15 (5.1)	109 (6.3)	0.80(0.46-1.40)	0.431
Inhaled corticosteroid	9 (3.1)	65 (3.8)	0.82(0.41-1.62)	0.565
Long acting β-agonist	1 (<0.5)	8 (<0.5)	0.75(0.09-6.04)	0.786
Oral corticosteroid	4 (1.4)	12 (0.7)	1.99(0.64-6.22)	0.238
Other bronchodilator medication**	1 (<0.5)	5 (<0.5)	1.19(0.14-10.13)	0.872
Other anti-inflammatory medication***	1 (<0.5)	5 (<0.5)	1.20(0.14-10.30)	0.868

<sup>α</sup> Proportion of cases or controls whose mothers have diagnosis or at least one selected drug prescription in pregnancy

<sup>β</sup> Odds Ratios (95% Confidence Intervals) adjusted for maternal age at birth of case or control child; Maternal smoking status, body mass index, socioeconomic status, sex of the child, gestation of pregnancy had no confounding effects.

<sup>γ</sup> Any asthma medication except oral corticosteroids

\*Reference groups are mothers with no prescriptions for the selected drug group in pregnancy

\*\*Aminophylline, theophylline, ephedrine, orciprenaline, tiotropium, or ipratropium

\*\*\*Cromoglicic acid, nedocromil, montelukast or zafirlukast

**Table 3 Risk of circulatory system malformation in children born to women with asthma**

	cases (n=1,256)		controls (n=7,356)		Adjusted Odds Ratio <sup>β</sup>	p-value
	n	(%) <sup>α</sup>	n	(%) <sup>α</sup>	(95% CI)	
<b>Maternal asthma:</b>						
no asthma diagnosis or medications before delivery	1,073	(85.4)	6,429	(87.4)	reference	
asthma diagnosis or medication <sup>γ</sup> before delivery	183	(14.6)	927	(12.6)	1.20(1.01-1.43)	0.037
diagnosis with no medication before delivery	37	(2.9)	213	(2.9)	1.07(0.74-1.54)	0.714
asthma medication <sup>γ</sup> but no diagnosis before delivery	51	(4.1)	227	(3.1)	1.36(0.99-1.86)	0.055
diagnosis and asthma medication <sup>γ</sup> before delivery	95	(7.6)	487	(6.6)	1.18(0.94-1.49)	0.163
≥1 asthma exacerbation during pregnancy	6	(<0.5)	24	(<0.5)	1.44(0.51-4.05)	0.495
<b>≥1 medication exposure during pregnancy*:</b>						
Any asthma medication	113	(9.0)	535	(7.3)	1.27(1.02-1.58)	0.032
Short acting β-agonist	107	(8.5)	497	(6.8)	1.29(1.03-1.61)	0.024
Inhaled corticosteroid	68	(5.4)	293	(4.0)	1.38(1.04-1.82)	0.025
Long acting β-agonist	9	(0.7)	49	(0.7)	1.05(0.48-2.27)	0.910
Oral corticosteroid	15	(1.2)	48	(0.7)	1.85(1.03-3.33)	0.040
Other bronchodilator medication**	6	(<0.5)	20	(<0.5)	1.80(0.74-4.42)	0.198
Other anti-inflammatory medication***	1	(<0.5)	4	(<0.5)	1.47(0.16-13.65)	0.733

<sup>α</sup> Proportion of cases or controls whose mothers have diagnosis or at least one selected drug prescription in pregnancy

<sup>β</sup> Odds Ratios (95% Confidence Intervals) adjusted for maternal age at birth of case or control child; Maternal smoking status, body mass index, socioeconomic status, sex of the child, gestation of pregnancy had no confounding effects.

<sup>γ</sup> Any asthma medication except oral corticosteroids

\*Reference groups are mothers with no prescriptions for the selected drug group in pregnancy

\*\*Aminophylline, theophylline, ephedrine, orciprenaline, tiotropium, or ipratropium

\*\*\*Cromoglicate, nedocromil, montelukast or zafirlukast

**Table 4 Risk of respiratory system malformation in children born to women with asthma**

	cases (n=46)		controls (n=265)		Adjusted Odds Ratio <sup>β</sup> (95% CI)	p-value
	n	(%) <sup>α</sup>	n	(%) <sup>α</sup>		
<b>Maternal asthma:</b>						
no asthma diagnosis or medications before delivery	38	(82.6)	228	(86.0)	reference	
asthma diagnosis or medication <sup>γ</sup> before delivery	8	(17.4)	37	(14.0)	1.30(0.50-3.39)	0.596
diagnosis with no medication before delivery	1	(2.2)	7	(2.6)	0.70(0.07-6.93)	0.761
asthma medication <sup>γ</sup> but no diagnosis before delivery	2	(4.3)	11	(4.2)	1.14(0.25-5.20)	0.865
diagnosis and asthma medication <sup>γ</sup> before delivery	5	(10.9)	19	(7.2)	1.71(0.50-5.78)	0.390
≥1 asthma exacerbation during pregnancy	0	(<0.5)	0	(<0.5)	n/a	
<b>≥1 medication exposure during pregnancy*:</b>						
Any asthma medication	6	(13.0)	21	(7.9)	1.92(0.65-5.65)	0.236
Short acting β-agonist	6	(13.0)	20	(7.5)	2.04(0.68-6.13)	0.203
Inhaled corticosteroid	3	(6.5)	12	(4.5)	1.67(0.35-8.02)	0.519
Long acting β-agonist	0	(<0.5)	1	(<0.5)	n/a	
Oral corticosteroid	0	(<0.5)	1	(<0.5)	n/a	
Other bronchodilator medication**	0	(<0.5)	0	(<0.5)	n/a	
Other anti-inflammatory medication***	0	(<0.5)	0	(<0.5)	n/a	

<sup>α</sup> Proportion of cases or controls whose mothers have diagnosis or at least one selected drug prescription in pregnancy

<sup>β</sup> Odds Ratios (95% Confidence Intervals) adjusted for maternal age at birth of case or control child; Maternal smoking status, body mass index, socioeconomic status, sex of the child, gestation of pregnancy had no confounding effects.

<sup>γ</sup> Any asthma medication except oral corticosteroids

\*Reference groups are mothers with no prescriptions for the selected drug group in pregnancy

\*\*Aminophylline, theophylline, ephedrine, orciprenaline, tiotropium, or ipratropium

\*\*\*Cromoglicic acid, nedocromil, montelukast or zafirlukast

**Table 5 Risk of cleft lip and/or palate in children born to women with asthma**

	cases (n=255)		controls (n=1,513)		Adjusted Odds Ratio <sup>β</sup> (95% CI)	p-value
	n	(%) <sup>α</sup>	n	(%) <sup>α</sup>		
<b>Maternal asthma:</b>						
no asthma diagnosis or medications before delivery	214	(83.9)	1,296	(85.7)	reference	
asthma diagnosis or medication <sup>γ</sup> before delivery	41	(16.1)	217	(14.3)	1.15(0.79-1.67)	0.477
diagnosis with no medication before delivery	11	(4.3)	55	(3.6)	1.25(0.60-2.61)	0.559
asthma medication <sup>γ</sup> but no diagnosis before delivery	12	(4.7)	59	(3.9)	1.24(0.65-2.37)	0.506
diagnosis and asthma medication <sup>γ</sup> before delivery	18	(7.1)	103	(6.8)	1.05(0.62-1.77)	0.852
≥1 asthma exacerbation during pregnancy	0	(<0.5)	7	(<0.5)	n/a	
<b>≥1 medication exposure during pregnancy*:</b>						
Any asthma medication	16	(6.3)	126	(8.3)	0.73(0.43-1.24)	0.246
Short acting β-agonist	14	(5.5)	115	(7.6)	0.69(0.39-1.24)	0.216
Inhaled corticosteroid	5	(2.0)	64	(4.2)	0.45(0.18-1.11)	0.082
Long acting β-agonist	0	(<0.5)	7	(<0.5)	n/a	
Oral corticosteroid	1	(<0.5)	13	(0.9)	0.47(0.06-3.67)	0.471
Other bronchodilator medication**	1	(<0.5)	8	(0.5)	0.80(0.10-6.44)	0.832
Other anti-inflammatory medication***	1	(<0.5)	2	(<0.5)	3.21(0.29-35.08)	0.340

<sup>α</sup> Proportion of cases or controls whose mothers have diagnosis or at least one selected drug prescription in pregnancy

<sup>β</sup> Odds Ratios (95% Confidence Intervals) adjusted for maternal age at birth of case or control child; Maternal smoking status, body mass index, socioeconomic status, sex of the child, gestation of pregnancy had no confounding effects.

<sup>γ</sup> Any asthma medication except oral corticosteroids

\*Reference groups are mothers with no prescriptions for the selected drug group in pregnancy

\*\*Aminophylline, theophylline, ephedrine, orciprenaline, tiotropium, or ipratropium

\*\*\*Cromoglicic acid, nedocromil, montelukast or zafirlukast

**Table 6 Risk of digestive system malformation in children born to women with asthma**

	cases (n=166)		controls (n=974)		Adjusted Odds Ratio <sup>β</sup> (95% CI)	p-value
	n	(%) <sup>α</sup>	n	(%) <sup>α</sup>		
<b>Maternal asthma:</b>						
no asthma diagnosis or medications before delivery	139	(83.7)	825	(84.7)	reference	
asthma diagnosis or medication <sup>γ</sup> before delivery	27	(16.3)	149	(15.3)	1.10(0.71-1.70)	0.670
diagnosis with no medication before delivery	4	(2.4)	45	(4.6)	0.54(0.19-1.52)	0.243
asthma medication <sup>γ</sup> but no diagnosis before delivery	11	(6.6)	36	(3.7)	1.86(0.96-3.62)	0.066
diagnosis and asthma medication <sup>γ</sup> before delivery	12	(7.2)	68	(7.0)	1.03(0.53-2.00)	0.932
≥1 asthma exacerbation during pregnancy	0	(<0.5)	2	(<0.5)	n/a	
<b>≥1 medication exposure during pregnancy*:</b>						
Any asthma medication	20	(12.0)	77	(7.9)	1.65(0.99-2.74)	0.053
Short acting β-agonist	18	(10.8)	76	(7.8)	1.47(0.86-2.51)	0.156
Inhaled corticosteroid	8	(4.8)	41	(4.2)	1.17(0.50-2.69)	0.719
Long acting β-agonist	0	(<0.5)	2	(<0.5)	n/a	
Oral corticosteroid	2	(1.2)	8	(0.8)	1.38(0.32-5.97)	0.669
Other bronchodilator medication**	1	(0.6)	0	(<0.5)	n/a	
Other anti-inflammatory medication***	0	(<0.5)	0	(<0.5)	n/a	

<sup>α</sup> Proportion of cases or controls whose mothers have diagnosis or at least one selected drug prescription in pregnancy

<sup>β</sup> Odds Ratios (95% Confidence Intervals) adjusted for maternal age at birth of case or control child; Maternal smoking status, body mass index, socioeconomic status, sex of the child, gestation of pregnancy had no confounding effects.

<sup>γ</sup> Any asthma medication except oral corticosteroids

\*Reference groups are mothers with no prescriptions for the selected drug group in pregnancy

\*\*Aminophylline, theophylline, ephedrine, orciprenaline, tiotropium, or ipratropium

\*\*\*Cromoglicate, nedocromil, montelukast or zafirlukast

**Table 7 Risk of genital organ malformation in children born to women with asthma**

	cases (n=913)		controls (n=5,345)		Adjusted Odds Ratio <sup>β</sup>	p-value
	n	(%) <sup>α</sup>	n	(%) <sup>α</sup>	(95% CI)	
<b>Maternal asthma:</b>						
no asthma diagnosis or medications before delivery	797	(87.3)	4,675	(87.5)	reference	
asthma diagnosis or medication <sup>γ</sup> before delivery	116	(12.7)	670	(12.5)	1.01(0.82-1.26)	0.904
diagnosis with no medication before delivery	30	(3.3)	138	(2.6)	1.31(0.87-1.97)	0.203
asthma medication <sup>γ</sup> but no diagnosis before delivery	29	(3.2)	194	(3.6)	0.89(0.59-1.33)	0.559
diagnosis and asthma medication <sup>γ</sup> before delivery	57	(6.2)	338	(6.3)	0.98(0.73-1.31)	0.874
≥1 asthma exacerbation during pregnancy	3	(<0.5)	21	(<0.5)	0.66(0.23-1.89)	0.439
<b>≥1 medication exposure during pregnancy*:</b>						
Any asthma medication	69	(7.6)	408	(7.6)	0.98(0.74-1.28)	0.865
Short acting β-agonist	64	(7.0)	375	(7.0)	0.98(0.74-1.30)	0.905
Inhaled corticosteroid	37	(4.1)	225	(4.2)	0.93(0.65-1.32)	0.681
Long acting β-agonist	3	(<0.5)	24	(<0.5)	0.72(0.22-2.35)	0.582
Oral corticosteroid	10	(1.1)	40	(0.7)	1.33(0.68-2.61)	0.407
Other bronchodilator medication**	3	(<0.5)	15	(<0.5)	1.11(0.34-3.63)	0.863
Other anti-inflammatory medication***	1	(<0.5)	9	(<0.5)	0.67(0.08-5.23)	0.699

<sup>α</sup> Proportion of cases or controls whose mothers have diagnosis or at least one selected drug prescription in pregnancy

<sup>β</sup> Odds Ratios (95% Confidence Intervals) adjusted for maternal age at birth of case or control child; Maternal smoking status, body mass index, socioeconomic status, sex of the child, gestation of pregnancy had no confounding effects.

<sup>γ</sup> Any asthma medication except oral corticosteroids

\*Reference groups are mothers with no prescriptions for the selected drug group in pregnancy

\*\*Aminophylline, theophylline, ephedrine, orciprenaline, tiotropium, or ipratropium

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**Table 8 Risk of urinary system malformation in children born to women with asthma**

	cases (n=313)		controls (n=1,850)		Adjusted Odds Ratio <sup>β</sup>	p-value
	n	(%) <sup>α</sup>	n	(%) <sup>α</sup>	(95% CI)	
<b>Maternal asthma:</b>						
no asthma diagnosis or medications before delivery	267	(85.3)	1,628	(88.0)	reference	
asthma diagnosis or medication <sup>γ</sup> before delivery	46	(14.7)	222	(12.0)	1.25(0.89-1.76)	0.193
diagnosis with no medication before delivery	14	(4.5)	54	(2.9)	1.59(0.87-2.90)	0.132
asthma medication <sup>γ</sup> but no diagnosis before delivery	11	(3.5)	45	(2.4)	1.50(0.77-2.90)	0.232
diagnosis and asthma medication <sup>γ</sup> before delivery	21	(6.7)	123	(6.6)	1.03(0.63-1.68)	0.921
≥1 asthma exacerbation during pregnancy	2	(0.6)	3	(<0.5)	4.32(0.74-25.21)	0.104
<b>≥1 medication exposure during pregnancy*:</b>						
Any asthma medication	25	(8.0)	131	(7.1)	1.13(0.72-1.77)	0.594
Short acting β-agonist	24	(7.7)	122	(6.6)	1.16(0.74-1.83)	0.518
Inhaled corticosteroid	11	(3.5)	75	(4.1)	0.83(0.42-1.63)	0.587
Long acting β-agonist	0	(<0.5)	12	(0.6)	n/a	
Oral corticosteroid	4	(1.3)	10	(0.5)	2.40(0.76-7.60)	0.138
Other bronchodilator medication**	1	(<0.5)	1	(<0.5)	6.39(0.40-102.91)	0.191
Other anti-inflammatory medication***	0	(<0.5)	0	(<0.5)	n/a	

<sup>α</sup> Proportion of cases or controls whose mothers have diagnosis or at least one selected drug prescription in pregnancy

<sup>β</sup> Odds Ratios (95% Confidence Intervals) adjusted for maternal age at birth of case or control child; Maternal smoking status, body mass index, socioeconomic status, sex of the child, gestation of pregnancy had no confounding effects.

<sup>γ</sup> Any asthma medication except oral corticosteroids

\*Reference groups are mothers with no prescriptions for the selected drug group in pregnancy

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\*\*\*Cromoglicate, nedocromil, montelukast or zafirlukast

**Table 9 Risk of musculoskeletal system malformation in children born to women with asthma**

	cases (n=1,431)		controls (n=8,372)		Adjusted Odds Ratio <sup>β</sup>	p-value
	n	(%) <sup>α</sup>	n	(%) <sup>α</sup>	(95% CI)	
<b>Maternal asthma:</b>						
no asthma diagnosis or medications before delivery	1,213	(84.8)	7,304	(87.2)	reference	
asthma diagnosis or medication <sup>γ</sup> before delivery	218	(15.2)	1,068	(12.8)	1.25(1.06-1.47)	0.009
diagnosis with no medication before delivery	50	(3.5)	246	(2.9)	1.23(0.89-1.70)	0.214
asthma medication <sup>γ</sup> but no diagnosis before delivery	64	(4.5)	266	(3.2)	1.46(1.11-1.93)	0.007
diagnosis and asthma medication <sup>γ</sup> before delivery	104	(7.3)	556	(6.6)	1.14(0.91-1.43)	0.241
≥1 asthma exacerbation during pregnancy	6	(<0.5)	22	(<0.5)	1.71(0.70-4.17)	0.241
<b>≥1 medication exposure during pregnancy*:</b>						
Any asthma medication	125	(8.7)	638	(7.6)	1.16(0.95-1.43)	0.143
Short acting β-agonist	118	(8.2)	598	(7.1)	1.17(0.95-1.45)	0.132
Inhaled corticosteroid	68	(4.8)	355	(4.2)	1.13(0.86-1.48)	0.383
Long acting β-agonist	10	(0.7)	29	(<0.5)	2.12(1.00-4.49)	0.050
Oral corticosteroid	8	(0.6)	65	(0.8)	0.71(0.33-1.52)	0.381
Other bronchodilator medication**	2	(<0.5)	14	(<0.5)	0.84(0.19-3.63)	0.814
Other anti-inflammatory medication***	5	(<0.5)	4	(<0.5)	9.38(2.31-38.10)	0.002

<sup>α</sup> Proportion of cases or controls whose mothers have diagnosis or at least one selected drug prescription in pregnancy

<sup>β</sup> Odds Ratios (95% Confidence Intervals) adjusted for maternal age at birth of case or control child; Maternal smoking status, body mass index, socioeconomic status, sex of the child, gestation of pregnancy had no confounding effects.

<sup>γ</sup> Any asthma medication except oral corticosteroids

\*Reference groups are mothers with no prescriptions for the selected drug group in pregnancy

\*\*Aminophylline, theophylline, ephedrine, orciprenaline, tiotropium, or ipratropium

\*\*\*Cromoglicate, nedocromil, montelukast or zafirlukast

**Table 10 Risk of other non-categorised malformation in children born to women with asthma**

	cases (n=407)		controls (n=2,400)		Adjusted Odds Ratio <sup>β</sup>	p-value
	n	(%) <sup>α</sup>	n	(%) <sup>α</sup>	(95% CI)	
<b>Maternal asthma:</b>						
no asthma diagnosis or medications before delivery	356	(87.5)	2,102	(87.6)	reference	
asthma diagnosis or medication <sup>γ</sup> before delivery	51	(12.5)	298	(12.4)	1.04(0.76-1.44)	0.795
diagnosis with no medication before delivery	14	(3.4)	70	(2.9)	1.23(0.68-2.21)	0.499
asthma medication <sup>γ</sup> but no diagnosis before delivery	8	(2.0)	73	(3.0)	0.65(0.31-1.36)	0.258
diagnosis and asthma medication <sup>γ</sup> before delivery	29	(7.1)	155	(6.5)	1.15(0.75-1.77)	0.518
≥1 asthma exacerbation during pregnancy	2	(<0.5)	7	(<0.5)	1.94(0.40-9.37)	0.408
<b>≥1 medication exposure during pregnancy*:</b>						
Any asthma medication	30	(7.4)	173	(7.2)	1.04(0.69-1.58)	0.842
Short acting β-agonist	25	(6.1)	164	(6.8)	0.50(0.24-1.06)	0.070
Inhaled corticosteroid	19	(4.7)	92	(3.8)	1.27(0.76-2.13)	0.361
Long acting β-agonist	1	(<0.5)	8	(<0.5)	0.80(0.10-6.58)	0.837
Oral corticosteroid	3	(0.7)	21	(0.9)	0.81(0.24-2.78)	0.741
Other bronchodilator medication**	1	(<0.5)	6	(<0.5)	0.95(0.12-7.84)	0.963
Other anti-inflammatory medication***	0	(<0.5)	0	(<0.5)	n/a	

<sup>α</sup> Proportion of cases or controls whose mothers have diagnosis or at least one selected drug prescription in pregnancy

<sup>β</sup> Odds Ratios (95% Confidence Intervals) adjusted for maternal age at birth of case or control child; Maternal smoking status, body mass index, socioeconomic status, sex of the child, gestation of pregnancy had no confounding effects.

<sup>γ</sup> Any asthma medication except oral corticosteroids

\*Reference groups are mothers with no prescriptions for the selected drug group in pregnancy

\*\*Aminophylline, theophylline, ephedrine, orciprenaline, tiotropium, or ipratropium

\*\*\*Cromoglicate, nedocromil, montelukast or zafirlukast

**Table 11 Risk of chromosomal abnormalities not elsewhere classified in children born to women with asthma**

	cases (n=260)		controls (n=1,519)		Adjusted Odds Ratio <sup>β</sup>	p-value
	n	(%) <sup>α</sup>	n	(%) <sup>α</sup>	(95% CI)	
<b>Maternal asthma:</b>						
no asthma diagnosis or medications before delivery	238	(91.5)	1,320	(86.9)	reference	
asthma diagnosis or medication <sup>γ</sup> before delivery	22	(8.5)	199	(13.1)	0.62(0.37-1.03)	0.066
diagnosis with no medication before delivery	9	(3.5)	57	(3.8)	1.01(0.43-2.36)	0.984
asthma medication <sup>γ</sup> but no diagnosis before delivery	7	(2.7)	55	(3.6)	0.59(0.25-1.41)	0.236
diagnosis and asthma medication <sup>γ</sup> before delivery	6	(2.3)	87	(5.7)	0.43(0.18-1.02)	0.054
≥1 asthma exacerbation during pregnancy	0	(<0.5)	2	(<0.5)	n/a	
<b>≥1 medication exposure during pregnancy*:</b>						
Any asthma medication	9	(3.5)	106	(7.0)	0.45(0.22-0.95)	0.035
Short acting β-agonist	9	(3.5)	99	(6.5)	0.50(0.24-1.06)	0.070
Inhaled corticosteroid	1	(<0.5)	52	(3.4)	0.11(0.01-0.80)	0.030
Long acting β-agonist	0	(<0.5)	1	(<0.5)	n/a	
Oral corticosteroid	1	(<0.5)	12	(0.8)	0.74(0.09-5.95)	0.774
Other bronchodilator medication**	1	(<0.5)	7	(<0.5)	0.87(0.10-7.71)	0.901
Other anti-inflammatory medication***	1	(<0.5)	2	(<0.5)	5.04(0.40-63.36)	0.211

<sup>α</sup> Proportion of cases or controls whose mothers have diagnosis or at least one selected drug prescription in pregnancy

<sup>β</sup> Odds Ratios (95% Confidence Intervals) adjusted for maternal age at birth of case or control child; Maternal smoking status, body mass index, socioeconomic status, sex of the child, gestation of pregnancy had no confounding effects.

<sup>γ</sup> Any asthma medication except oral corticosteroids

\*Reference groups are mothers with no prescriptions for the selected drug group in pregnancy

\*\*Aminophylline, theophylline, ephedrine, orciprenaline, tiotropium, or ipratropium

\*\*\*Cromoglicate, nedocromil, montelukast or zafirlukast